2. Claims 1-3, 36 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 states that "the hierarchy position being identified by position values in the dimensions that are different from the node level and the node-in-level".

On the other hand, claims 2-3 states that the position values comprise the depth value and the position-in-level value.

Claim 1 has been amended.

Regarding claim 36, the feature of a user interface window for navigation of a hierarchy of nodes that occupies less than 25% of the web page is not disclosed in the specification.

Claim 36 itself disclosed the feature that it claims as permitted by law.

4. Claims 2-4, 8, 15-17, 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2-3, it is confusing that the depth value and the position-in-level value are in the form of a *non-integral* number since the levels (0-3) disclosed in figure 1 are *integer* numbers.

Regarding claim 4, the word a "node-in-value level" (line 2) does not make sense. Correction is required.

In addition, since claim 3 states that the position-in-level value is a non-integral number, which is a floating-point number, it is confusing when claim 4 states that "a node-in-level value *identifying one node plus a floating-point number representing an offset of the position from that node*".
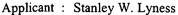
Claims 2-4 have been amended.

Regarding claim 8, it is not clear what Applicants means in *"and within a band space is allocated* so that the subspace of a parent has the *same dimension* along the band as *the sum of the dimensions* of its children along the adjacent band".

Claim 8 has been amended.

Regarding claims 15-17, it is not reasonable when the first type of action is dragging and the second type of action is clicking. Users cannot drag an object without clicking on the object first. That feature is stated in the specification (page 28, lines 28-29).

Claims 15 and 17 have been amended.

5. Claims 13 and 14 are objected as being duplicate claims. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 14 has been cancelled.

7. Claims 6-7, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Theisen et al. (US Pat No. 5,877,775 3/2/99, filed 8/6/97).

Regarding independent claim 6 and claim 7, Theisen discloses:
- displaying representations of nodes of a hierarchy in a space on a display, each node representation fully occupying a subspace within the space (figure 3)
- allocating the space entirely to the subspace (figure 3)
- the nodes are organized in levels in the hierarchy and the space is allocated among levels so that one level is fully represented in a dimension of the display that corresponds to changing levels and the levels of the hierarchy above and below the one level that are at least partially represented (figure 3)

Theisen does not disclose or suggest "receiving an indication of an action to be taken, the indication being received made at any arbitrary position within the subarea", as recited in claim 6. Theisen's node representations have unoccupied areas between them that cannot receive any indication of an action to be taken. Theisen's hierarchy contains "node gap[s] specif[ying] a predetermined spacing (or distance) between nodes," (fig. 1, item 22; col. 3, lines 47-49).

In one way to generate a representation of that hierarchy , Theisen discloses "shifting" the coordinates of the nodes by using an X and Y displacement value to calculate new X and Y coordinates for each node (figs. 3-4B; col. 4, lines 55-58). In a second way, Theisen discloses shifting only the Y coordinates of each node to create the hierarchy representation. (fig. 6; col.5, lines 55-61). In a third way to generate a hierarchy representation, Theisen puts a "space buffer" between sticks and, if possible, expands that space buffer. (fig 5B, items 128, 132; 5C, item 144; col. 5, lines 45-49).

All of these methods generate node representations in the form of "sticks," (col. 5, lines 24-25) or "containers," (col. 6, lines 27-30), but neither the shifting nor the generation of sticks removes the spaces between the sticks. (figs. 3 and 7A-B; col. 5, lines 24-27, 61-63). Theisen's purpose for the spaces is to "maintain" and "reinforce the stepped, three-dimensional look of the hierarchical data representation." (col. 7, lines 12-16, 51-53).

The spaces between the sticks cannot receive any indication of an action to be taken, because Theisen only receives indications at sticks and containers and not at the spaces between them. For example, highlighting occurs in response to the movement of a cursor by a user "over a container." (fig. 9, item 194; col. 6, lines 21-24). Expanding a branch or sub-branch begins when "user clicks on a container." (fig. 12, item 224; col. 6, lines 58-59). Further, Theisen allows a user who "double clicks on a container" to view the contents of the node (fig. 14A, item 304; col. 8, lines 1-4), and to edit the hierarchical representation "when user clicks and drags on container label/stick" (fig. 15, item 364; col. 8, lines 22-27). Finally, Theisen discloses displaying hidden nodes when a user "click[s] on a container with a hidden subtree." (fig. 16, item 404; col. 8, lines 34-38). Thus, Theisen does not disclose or suggest "receiving an indication of an action to be taken, the indication being made at any arbitrary position within the subarea." Amended claim 7 is dependent on amended claim 6 and patentable for at least the same reasons.

Regarding independent claim 15 and dependant claims 16 and 17, Theisen discloses:
- **displaying a representation of a portion of a hierarchy of nodes to a user (figures 7A-B)**
- **associating with each node an action to be performed by an application, that action being other than the navigation of the hierarchy, and enabling a user to navigate in the displayed representation of the portion of the hierarchy by a first type of action, which is clicking (figure 15, user clicks and drags on container label; col 8 lines 22-27)**
- **enabling a user to trigger the action associated with a displayed node of the hierarchy by invoking the node using a second type of action, which is dragging (figure 15, user clicks and drags on container label; col 8 lines 22-27)**

Theisen does not disclose or suggest associating with each node an action that is "other than generating a representation of the hierarchy," as recited in amended claim 15. Theisen discloses "highlighting of a node path," (col. 6, line 21), "expanding a branch or sub-tree of a hierarchical data tree," (col. 6, line 45), viewing the contents of a node, (col. 8, lines 2-3), editing the representation, (col. 8, lines 22-25), and "displaying a hidden, or contracted, hierarchical node structure," (col. 8, lines 33-34), all of which Theisen uses to represent a hierarchy.

Theisen also does not disclose or suggest "the application being other than the graphical user interface used to represent the hierarchy." The actions listed above are all performed by

graphical user interfaces. Claim 16 and amended claim 17 are dependent on amended claim 15

and patentable for at least the same reasons.

> **8.   Claims 32-35, 48 are rejected under 35 U.S.C. 102(b) as being anticipated
> by Dolan et al. (US Pat No. 5,801,702, 9/1/98, filed 3/9/95).**
>
> **Regarding independent claim 32 and claim 33, Dolan discloses:**
> - **an area that provides a navigational interface that permits continuous
>   navigation of a hierarchy of nodes (figure 1)**
> - **said nodes comprises links to other web pages (figures 1-2)**
>
> **Independent claim 34 and claim 35 are the web browser of claims 32-33, and
> therefore are rejected under the same rationale.**
>
> **Regarding independent claim 48, Dolan discloses:**
> - **displaying a portion of a hierarchy at a browser (figure 1)**
> - **enabling a user to navigate continuously through levels and nodes of the
>   hierarchy (figure 2)**
> - **delivering portions of the hierarchy from a remote server to the browser in time
>   to enable the continuous navigation during navigation (figure 8A-C).**

Applicant has amended claims 32, 34 and 48. Claim 32, for example, now recites that

> based on a user's continuous activation of a user interface device, of a
> hierarchy of nodes, the interface displays information about a portion that is
> less than all of the hierarchy at one time, the portion changing apparently
> continuously in response to the user's continuous activation of the user
> interface device

As shown in applicant's Figure 5, for example, drawing and re-drawing the hierarchy at

140 is not dependent on a change 124 in the emulated joystick position 122 as determined by a

user input device 120. Instead, the hierarchy may be re-drawn at step 140 when the displacement

of the emulated joystick position, which is monitored at constant intervals in step 142 (p. 17,

lines 9-15), is non-zero in any dimension (p. 14, lines 3-8). Thus, the user's initial input at 124

causing sufficient displacement of emulated joystick position 130 permits and enables

continuous navigation, i.e. the hierarchy is continuously redrawn, without any subsequent user

input.

Dolan's navigational interface provides discrete cycles of navigation each triggered by a

user command. Dolan relies upon "[s]ubsequent commands entered by the user" to initiate each

new, discrete cycle of navigation. (col. 11, lines 27-31); (see also fig 5, item 514; col. 9, lines

18-20, 45-48). Dolan thus neither discloses nor suggests the concept recited in the language quoted above.

Similar language is used in claims 34 and 48; and those claims are patentable for at least the same reasons. Dependent claims 33 and 35 are patentable for at least the same reasons.

> **10.** **Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiesen et al (U.S. Patent No. 5,877,775, 3/2/99, filed 8.6.97).**
>
> **Regarding independent claim 1, Thiesen discloses:**
> - **Identifying a hierarchy position in a space defined by a hierarchy of nodes, the space having at least two dimensions, each node being uniquely identifiable within the space by values in the respective dimensions (figure 3)**
> - **The hierarchy position being identified by position values in the dimensions that are different from the node level and the node-in-level (figure 3)**
>
> **Thiesen does not explicitly disclose the including of a node level identifying the node's hierarchy level and a node-in-level identifying the node uniquely among nodes in that level. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have incorporated the node level and the position of a node in a level into Thiesen. Since Thiesen shows the hierarchical structure of nodes, it motivates the recognizing of levels of nodes and the position of a node in each level.**
>
> **Regarding claims 2-3, which are dependent on claim 1, Thiesen does not explicitly disclose the position values comprises a depth value and a position-in-level value, both in the form of a non-integral number. However, since the position of a node in the hierarchy is based on the X, Y, and Z coordinates, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that the X, Y, Z coordinates are non-integral numbers.**
>
> **Regarding claim 4, which is dependant on claim 3, as disclosed in claim 3, the node-in-level value is a non-integral number, which is a floating point number.**

Claim 1 has been amended. Theisen does not suggest identifying a position by a "depth value comprising a node level value and an offset" and by a "node-in-level value comprising a node-in-level value and an offset," as recited in amended claim 1.

Theisen does not disclose or suggest either of the components of the depth and position-in-level values. More specifically, as the examiner has noted, "Theisen does not explicitly disclose the including of a node level identifying the node's hierarchy level and a node-in-level identifying the node uniquely among nodes in that level." (Rejection 10, ¶ 3) Theisen discloses using X, Y, and Z coordinates to identify positions but does not disclose using an offset to identify position. (figs. 3-4B; col. 4, lines 49-51, 58-60; col. 5, lines 8-14, 18-23) As Theisen

does not disclose using either component of the depth or position-in-level value to identify a

position in a space, there is simply nothing in Theisen to suggest to one of ordinary skill in the

art identifying a position in a space by a depth value and a position in level value. Amended

claims 2-4 are dependent on amended claim 1 and patentable for at least the same reasons.

> 11. Claims 9-11, 26-31, 36-42, 44-47 are rejected under 35 U.S.C. 103(a) as
> being unpatentable over Dolan et al. (US Pat No. 5,801,702, 9/1/98, filed 3/9/95).
>
> Regarding independent claim 9, Dolan discloses for a node in a hierarchy of nodes:
> - rendering a container associated with the node and a representation of
>   information associated with the node, the container having dimensions that
>   change with an amount of space dynamically allocated to the node based on a
>   changing focus in the hierarchy (figures 2, 8B-C, 11A-C)
> - drawing the container and the representation on a display (figures 1-2), and
>   when the focus changes,
> - re-rendering the container with updated dimensions and drawing the container
>   on the display (figures 11A-C)
>
> Dolan does not explicitly disclose the copying the rendered representation to a new
> location without re-rendering.
> It would have been obvious to one of ordinary skill in the art at the time of the
> invention was made to have recognized that the copying of the rendered
> representation to a new location is merely the same as the re-rendering of the
> representation when the focus changes.

Applicant disagrees.

Dolan does not disclose or suggest a container having "dimensions that change with an

amount of space dynamically allocated to the node based on a changing focus in the hierarchy"

let alone "re-rendering the container with updated dimensions and drawing the container on the

display, and, without re-rendering, copying the rendered representation to a new location" as

recited in claim 9. Dolan only discusses changing its icons based on whether the children of the

node represented by the icon are displayed or contain different types of children. Specifically,

Dolan discloses an open book icon representing a link "if the children of the link represented by

the book icon are shown," (col. 6, lines 3-5), and a closed book icon representing a link if "none

of the children represented [by the book icon] are shown." (col. 6, lines 8-9). Dolan also

discloses a newspaper icon representing a link to a classification of Usenet newsgroups

containing further sub-classifications of newsgroups and a stack of newspapers icon representing

"a link to classification which has no sub-classifications but instead contains links to postings of

an electronic group discussion." (col. 6, lines 12-26). Thus, the examiner's theory regarding

claim 9 appears to be incorrect. Claims 10-11 are dependent on claim 9 and patentable for at least the same reasons.

> **Regarding independent claim 26, Dolan discloses:**
> - displaying information about a portion of the hierarchy of nodes including a node at the top of a sub-hierarchy of the hierarchy (figure 8A)
> - displaying the information about the sub-hierarchy when user nagivates the sub-hierarchies for an approachable view (figures 8A-B)
>
> Dolan does not explicitly disclose the fetching, from a server, information about the sub-hierarchy. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Dolan to include that feature. The fact that Dolan displays information of sub-hierarchy as a result of the user's navigation implies that Dolan fetches said information before displaying to users.

Applicant has amended claim 26 to clarify that fetching of information about portions of the hierarchy occurs "as a result of no user interaction other than navigation". Dolan does not suggest such an arrangement. As mentioned earlier, Dolan's navigational interface relies upon "[s]ubsequent commands entered by the user" to initiate each new, discrete cycle of navigation, which would include fetching information from a server if the same were actually suggested in Dolan. (col. 11, lines 27-31); (see also fig 5, item 514; col. 9, lines 18-20, 45-48).

> **Regarding independent claim 27, Dolan discloses:**
> - providing to the client a portion but not all of the hierarchy definition, the portion referencing other portions of the hierarchy in response to user request (figure 8B-C)
>
> Dolan does not explicitly disclose the receiving at a server a request from a client for a hierarchy definition. Instead Dolan discloses that a user can access an item, which can include files and directories, over the Internet by merely selecting said item from the graphical representation (col 3, lines 10-45)
> It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have employed Dolan since users have to request at the server to access items over the Internet represented by a hierarchy of links (or nodes).

> **Regarding claims 28-29, which are dependent on claim 27, Dolan discloses:**
> - each of the portions comprises a sub-hierarchy (figure 8B).
>
> Dolan does not explicitly disclose the determining the size of the portion to be provided to the client adaptively based on parameters for optimizing communication between the server and the client. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have incorporated that feature to Dolan since Dolan provides different sizes of portions to be displayed to users depending on which sub-hierarchy to be requested.

Claim 27 has been amended to recite the features of claim 29 (now cancelled). Dolan does not disclose or suggest "determining the size of the portion of the hierarchy to be provided to the client adaptively based on parameters for optimizing communication between the server and the client".

Dolan does not disclose or suggest determining the size of the portion of the hierarchy based on any parameters. Specifically, Dolan merely discloses client-side methods for issuing a request to retrieve an item from a hierarchy based on a user entering a universal resource name (URN) (col. 8, lines 44-54), retrieving the requested item from a computer system of network 310 (col. 9, lines 32-35, 63-66), and parsing the item for links to children items (col. 10, lines 33-40). The size of the portion of the hierarchy is dependent solely on the number of links to children items present in the requested item and the size of the portion is not determined before providing the portion to the client. Claim 28 is patentable for at least the same reasons as claim 27.

> Regarding independent claim 37, Dolan discloses the continuous navigation of a hierarchy in which the navigation graph includes icons and associated descriptions connected so as to represent inter-relations of a hierarchical structure (figure 2; col 5, lines 24-63). Dolan does not explicitly disclose a device for navigating the hierarchy. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have recognized that users use a mouse to navigate the hierarchy of icons.

Claim 37 has been amended to clarify that non-discrete navigation is permitted by the process. Dolan's interface is discrete, not continuous.

Claims 38-47 are dependent on amended claim 37 and are patentable for at least the same reasons.

> 12.   Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dolan as applied to claim 37 above, and further in view of Guck (US Pat No. 5,794,039, 8/11/98, filed 12/18/96).
>
> Regarding claim 43, which is dependent on claim 37, Dolan does not disclose explicitly the using of the Dewey Decimal number applied in the hierarchy (figure 10). Guck discloses the using of the Dewey Decimal number, which is an extension of an integer for organizing email messages (col 11, lines 30-55; col 1, lines 55-62).

> It would have been obvious to one of ordinary skill in the art at the time of the
> invention was made to have combined Guck into Dolan to facilitate in organizing of
> the hierarchy of any size by applying the Dewey Decimal system into the hierarchy.

Claim 43 is dependent on amended claim 37 and patentable for at least the same reasons.

> 13. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable
> over Kotchey (US Pat No. 5,812,135, 9/22/98, filed 11/5/96).
>
> Regarding independent claim 12, Kotchey discloses:
> - receiving information indicating a displacement of a user input device within a
>   two-dimensional frame of reference (user selects a particular node, col 3, lines
>   36-67; col 4, lines 1-6; figures 2, 7; col 5, lines 1-38)
> - translating displacement in at least one of the dimensions to a rate of change of
>   a hierarchy position used to identify a focus of a user's view of the hierarchy
>   (figures 1-7; col 3, lines 36-67)
>
> Kotchey does not explicitly disclose the rate of change of a hierarchy position used
> to identify a focus of a user's view of the hierarchy
> However, it would have been obvious to one of ordinary skill in the art at the time of
> the invention was made to have included that feature into Kotchey. The fact that
> Kotchey shows the change of the focus to display different partial views of the
> hierarchy implies that the changes of different views are recorded.

Kotchey does not disclose or suggest "translating an amount of indicated displacement in at least one of the dimentsions to a rate of change of position in a hierarchy corresponding to a user's focus" as recited in amended claim 12. Kotchey discloses "select[ing] a particular node" (3, 41-42) by "highlighting with a cursor or by clicking a pointing device" (5, 5-6) but does not quantify the displacement of the highlighting and clicking nor suggest that an amount of displacement could be translated to any other value to be used for any purpose nor suggest that the displacement could affect a rate of change of hierarchy display rather than an abrupt change in the display. Claim 13 is dependent on amended claim 12 and patentable for at least the same reasons.

> 14. Claims 18-22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable
> over Seidensticker, Jr. et al (US Pat No 6,108,784, 8/22/00, filed 4/3/97).
>
> Regarding independent claim 18, Seidensticker discloses:
> - displaying a representation of a portion of a hierarchy of nodes (figure 1)
> - providing an emulation of an input device for enabling a user to navigate the
>   hierarchy (figure 1)
> - treating the user's manipulation as a manipulation of the input device in
>   response to the user manipulating an input device for navigating the hierarchy
>   (figure 1, col 3, lines 33-54; col 4, lines 40-62)

Seidensticker does not disclose explicitly that the input device is a return-to-center input device. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have included a return-to-center input device to Seidensticker to enhance the manipulation of navigating a hierarchy.

Seidensticker does not disclose or suggest providing "a software emulation of an input device," as recited in claim 18. Seidensticker discloses providing "a keypad disposed on the top of housing 32 and having four buttons that are used to control the display and the functions performed by [the device]." (col. 3, lines 35-38). Seidensticker's keypad is not a software emulation because it is an tangible object with physical properties such as mass and volume. Claims 19-25 are dependent on amended claim 18 and patentable for at least the same reasons.

15. Claims 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant appreciates the examiner's indication that these claims would be allowed.

Applicant asks that all claims be allowed. Please apply any other charges or credits to deposit account 06-1050, reference 10835-002001.

Respectfully submitted,

Date: 1 16 01

David L. Feigenbaum
Reg. No. 30,378

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20129391.doc